What is claimed is:

1. An ophthalmic mold comprising a shape memory polymer or shape memory alloy.

2. A mold in accordance with Claim 1 wherein said shape memory polymer is selected from the group consisting of norbornene homopolymers, copolymers of norbornene and alkylated imides, copolymers of norbornene and cyanoimides, copolymers of norbornene and alkoxylated imides, copolymers of norbornene and mono- or diesterified imides, copolymers of norbornene and a carboxylic acid derivative, a copolymer of norbornene and dimethane octahydronaphthalate and a copolymer of styrene and a vinyl compound.

3. A mold in accordance with Claim 2 wherein said shape memory polymer is a thermosetting resin.

4. A mold in accordance with Claim 3 wherein said SMP is a radiation cured resin.

5. A mold in accordance with Claim 3 wherein said thermosetting shape memory polymer is a copolymer of styrene and a vinyl compound.

6. A mold in accordance with Claim 1 comprising a first member and a second member.

7. A mold in accordance with claim 6 wherein said mold is prepared in a press and said second member of said mold is formed in a shape of a base curve element and said first member is formed in a shape of a front curve element.

8. A mold in accordance with Claim 7 wherein said press includes a core element which interacts with said base curve element or said front curve element.

9. A mold in accordance with Claim 8 wherein said base curve element and said front curve element are formed of a metal and wherein said base curve and said front curve elements have an optical forming surface whose root mean square surface roughness is no more than about 20 nanometers.

10. A mold in accordance with Claim 7 wherein said core element is provided by gas pressure.

11. A mold in accordance with Claim 1 wherein a mold half of said shape memory polymer mold is prepared in said press by the steps which comprise:

a) placing a preform of a shape memory polymer between a front curve element or a base curve element and a core element;

b) heating said preform to a temperature at or above the glass transition temperature but below the decomposition temperature of said shape memory polymer;

c) providing a pressure sufficient to cause said shape memory polymer sheet to assume a shape of said front curve or base curve element;

d) reducing the temperature of said formed shape memory polymer to below said glass transition temperature;

e) removing said formed shape memory polymer from said press.

12. A mold in accordance with Claim 11 wherein said temperature in said step d) is reduced to ambient.

13. A mold in accordance with Claim 11 wherein said preform is a sheet of said shape memory polymer is disposed in a holder prior to said step (a) and said formed shape memory polymer is removed from said holder subsequent to said step e).

14. A mold in accordance with Claim 1 further comprising one or more mold members wherein at least one mold member is prepared in an agile tool, comprising adjustment means that are used to shape said mold member.

15. A mold in accordance with Claim 14 wherein said adjustment means is a plurality or an array of concentric tubes, and said agile tool further comprises a deformable molding surface.

16. A mold in accordance with Claim 14 wherein said adjustment means is a plurality or an array of pins.

17. A mold in accordance with Claim 14 wherein said adjustment means is an array of heaters.

18. A mold in accordance with Claim 14 wherein said shape memory polymer halves are prepared in said agile tool by the steps which comprise:

a) contacting a sheet of a shape memory polymer between deformable molding surface, whose shape is defined by adjustment means, and a core element under a pressure sufficient to cause said shape memory polymer sheet to assume a shape of said front curve or base curve actuated surface at a temperature at or above the glass transition temperature but below the decomposition temperature of said shape memory polymer;

b) reducing the temperature of said formed shape memory polymer to below said glass transition temperature;

c) moving said core element out of contact with said sheet of said shape memory polymer; and

d) removing a mold formed shape memory polymer from said agile tool.

19. A mold in accordance with Claim 18 wherein said sheet of said shape memory polymer is disposed in a holder prior to said step (a) and said formed shape memory polymer is removed from said holder subsequent to said step (d).

20. A mold in accordance with Claim 6, wherein at least one surface of at least one mold member is formed by gas pressure that presses the surface opposite said one surface against a surface of a press or agile tool.

21. A mold in accordance with Claim 20 wherein said surface of said agile tool is formed by a plurality of concentric tubes.

22. A mold in accordance with Claim 1 wherein said mold is prepared by the steps which comprise:

a) disposing a sheet of a shape memory polymer upon an adjustment means, set to define a predetermined shape, said adjustment means being in a desired shape;

b) elevating the temperature of said sheet of said shape memory polymer to at least the glass transition temperature but below the decomposition temperature;

c) emitting a stream of gas at said sheet of said shape memory polymer at a pressure sufficient to cause a sheet of said shape memory polymer to form a shape of said adjustment means;

d) reducing the temperature of said formed shape memory polymer to below said glass transition temperature

e) removing said formed shape memory polymer from atop said adjustment means.

23. A mold in accordance with Claim 26 wherein said stream of temperature in said step (d) is reduced to ambient.

24. A mold in accordance with Claim 22 including the step of creating a vacuum concurrent with step (c).

25. A mold in accordance with claim 1 that further comprises intrinsic actuators.

26. A mold in accordance with claim 25 wherein said mold is prepared by the steps which comprise:

a) compressing a preform with projections on one surface of said preform;

b) actuating selected intrinsic actuators by heating said individual intrinsic actuators above the Tg of said intrinsic actuators, and

c) cooling said intrinsic actuators.